
$$2 + 3 = 5$$
$$6 + 2 =$$

This is a one-week excerpt from the Starfall Kindergarten Mathematics Teacher's Guide.

If you have questions or comments, please contact us.

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Applying Addition

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Applying Addition

Week 20

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Week 20 Summary

The children will continue their study of addition. They will review addition strategies and use them to solve number stories. They will review coins (pennies, nickels and dimes) and their values and use them to “go shopping!”

The children will also:

- Form addition number stories using illustrations
- Solve addition problems to 10
- Be introduced to story maps
- Learn to solve for X

Preparation

DAY 1

There is no additional preparation needed.

DAY 2

You will use Addition Equation Cards through 5.

Today’s math lesson has the children divided into 5 groups. Each group will solve the same story problems, but they will each use different (assigned) strategies to do so. The groups will rotate in order to experience all of the strategies introduced on *Backpack Bear’s Math Big Book* page 44, Strategies for Adding.

You will need Number Cards 1 through 5 to designate the groups and enough of the following materials to accommodate your class.

- Group 1 - Math mats and two-sided counters
- Group 2 – Connect cubes in two different colors
- Group 3 – Individual whiteboards and markers
- Group 4 – Math mats (number line)
- Group 5 – Individual whiteboards and markers (tally marks)



DAY 3

You will use Addition Equation Cards for the numbers 5 through 10 (equations that include +1 only).

Display *Nursery Rhymes* pages 25 and 27, "Little Bo Peep" and "Mary Had a Little Lamb."

DAY 4

The children will need their math bags containing pennies, nickels, and dimes. You will use Picture Cards with Price Tags (airplane, pencil, orange, pretzel, apple, party hat, marble).

Duplicate a copy of the "Let's Go Shopping" worksheet for each child. The children will need their scissors and glue sticks.



"Let's Go Shopping" Worksheet

DAY 5

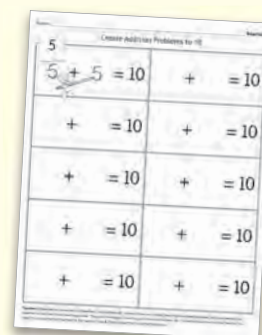
Activity Center 1 — Navigate classroom computers to *Starfall.com*.

Activity Center 2 — The children will use 1 or 2 "Coin Town" game boards, coin spinners, playing pieces, a cup or other container of coins (pennies, nickels, dimes), and 1 empty paper or plastic cup for each child.

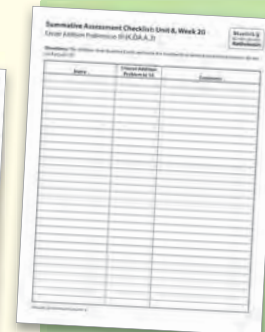
Activity Center 3 — The children will use 1 or 2 "Parking Lot" game boards and a set of dominoes placed face down.

Activity Center 4 — Prepare materials for this week's Teacher's Choice Activity.

Summative Assessment — Duplicate a copy of the "Create Addition Problems to 10" worksheet for each child. The children will use connect cubes and several sets of Number Cards 0 through 10. Record responses on the Summative Assessment Checklist for Unit 8, Week 20.



Create Addition Problems to 10 Worksheet



Summative Assessment Unit 8 - Week 20

DAY 1

DAY 2

Daily Routines

- Calendar
- Weather
- Number Line
- Place Value
- Hundreds Chart

Magic Math Moment

"Five Little Bees"

Addition flash cards

Math Concepts

Act out math (addition) song
 Build addition number stories
 Determine the missing number in an addition equation
 Solve for X

Solve addition problems on flash cards
 Review addition strategies
 Groups solve addition problems using the different strategies

Formative / Summative Assessment

Determine missing number in addition equations and solve

Solve addition story problems

Workbooks & Media

Math Melodies Track 5
 Workbook pages 11 and 12



DAY 3

DAY 4

DAY 5

- Calendar
- Weather
- Number Line
- Place Value
- Hundreds Chart

Learning Centers

Addition flash cards (greater numbers)

Word Problems

Starfall.com:

- Monthly Calendar
- Money Link,
- Add & Subtract: "Word Problems" and "Make 10"

1

Solve addition problems on flash cards

Review penny, nickel, and dime

"Coin Town"

2

Introduce story maps

Discuss uses for money

Review coin values

"Go shopping" using real coins

3

Use story maps to create and solve number stories

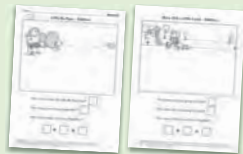
Use a story map to create and solve an addition equation

Add "pennies" in order to have enough money to purchase items

"Parking Lot"

4

Workbook pages 13 and 14



Starfall.com, Addition & Subtraction:

"Word Problems"

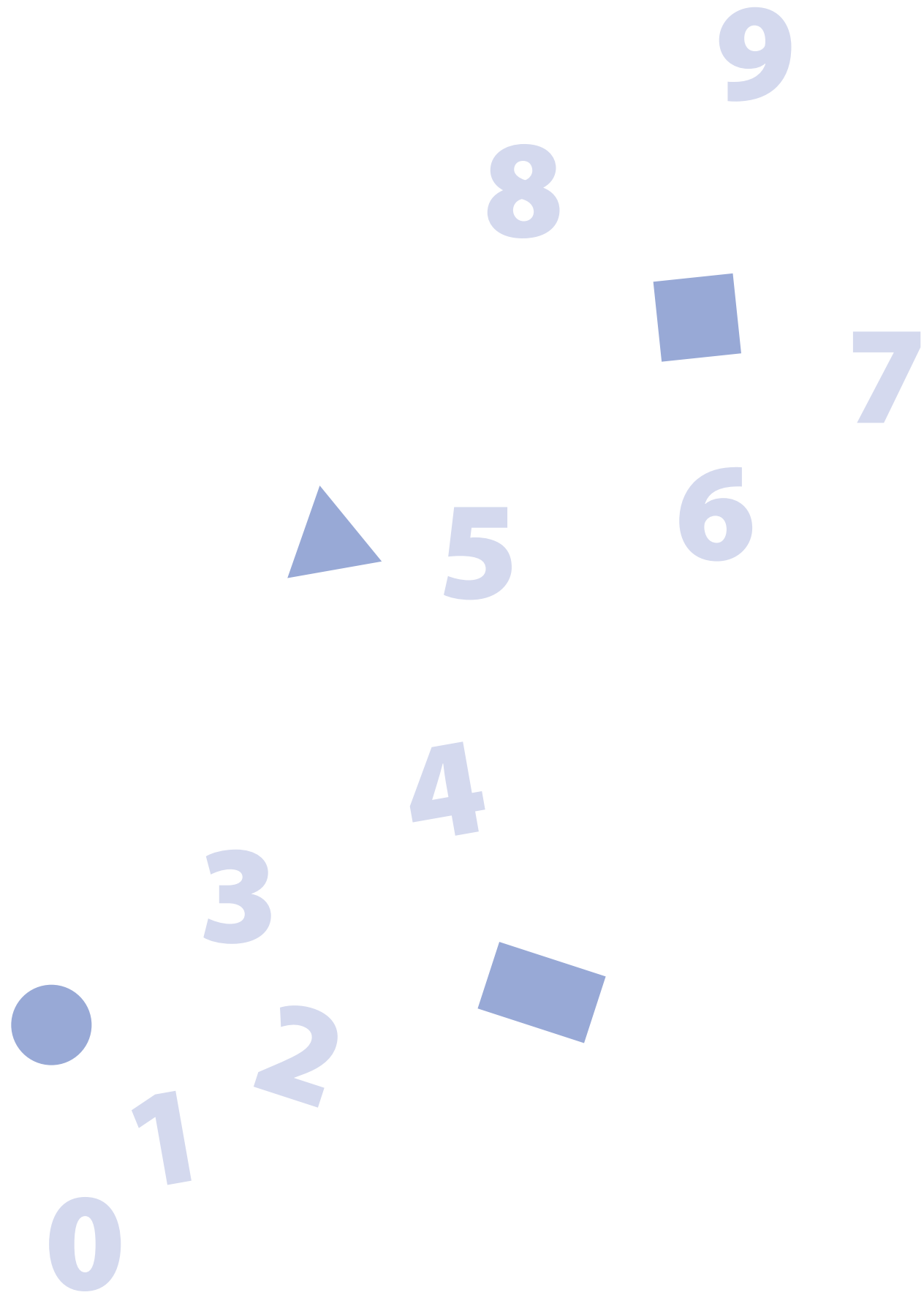
"Let's Go Shopping"

Teacher's Choice

5

Create addition problems to 10

Summative Assessment: Add a number to equal 10



"Five Little Bees"

Ask: **Who can share something about bees?**

Volunteers respond.

Say: **Let's listen to a song about five little bees.** Play *Math Melodies* Track 5, "Five Little Bees."

Continue: **Let's listen again, only this time five volunteers will act out the song.** Select five volunteers and play the song again.

Ask: **When we acted out this song, did we add bees or take bees away?** (Volunteers respond.) **Right, we started with one bee and then we repeatedly added one more until there were five.**

Repeat with different sets of volunteers as time permits.

Materials

- Math Melodies* Track 5

Counting & Cardinality

B.4 - Understand the relationship between numbers and quantities.

B.4a - Say number names in order, pairing each object with one number.

Operations & Algebraic Thinking

A.2 - Solve word problems with addition and subtraction within 10.

Missing Numbers

1 Building Addition Number Stories

Say: **Today we will use pictures to build number stories and then we will solve them.**

Distribute *Backpack Bear's Math Workbook #2* and instruct the children to turn to page 11.

Say: **Look at the first box. What do you see? Backpack Bear created a story about these pictures. Would you like to hear it?**

Continue: **One day Backpack Bear went to the beach. He brought 3 beach balls with him to play with on the sand. As he was playing he found 3 more beach balls. How many beach balls did he have in all?**

Demonstrate how to write the equation under the pictures. The children write the equation on their workbook pages.

Say: **Look at the second box. What do you see? Who can make up a story about the crayons?**

Continue this process for each problem. It is not necessary for children to color the pictures.

Note: The children will use their workbooks again at the end of today's lesson.

Materials

- Backpack Bear's Math Workbook #2*, pages 11 and 12
- Pencils
- Math bags
- Individual whiteboards and markers



2 Solving For X

Say: **Today we will be “missing number” detectives. Remember to use the addition strategies to help find the missing number!**

Make an x on the whiteboard.

Ask: **What number does x stand for?** Volunteers respond.

Explain: **Right, we don’t know because x is not a number! It is unknown. We don’t know how much x is!**

Write $3 + x = 4$ on the whiteboard. Read: **Three plus x = 4. X stands for the missing number. What do we need to add to 3 to equal 4?** (Volunteers respond.) **Right, 1. So, x = 1.**

Write $3 + x = 4$, and below that write $x = 1$.

Say: **Let’s try some more.** Continue solving for x, presenting several examples to the class. Choose volunteers to come to the board to complete the equations. Review the equation and value of x each time. Example:

Distribute individual whiteboards and markers.

Say: **Now you will try solving for x on your own. On your whiteboard write $5 + x = 6$.** The children do this.

$$4 + x = 6$$

$$x = \underline{\quad}$$

Continue: **Write $x = \underline{\quad}$ under the equation. Now think, 5 plus what number equals 6? Write what number x stands for.**

Provide several equations for the children to solve for x. Include problems that include zero. Example:

$$x + 6 = 7$$

$$x = \underline{\quad}$$



Formative Assessment

What Number is Missing?

Distribute math bags and *Backpack Bear’s Math Workbook #2* and instruct the children to turn to page 12.

Say: **Remove the connect cubes from your math bags. You can use the connect cubes to help you tell what number is missing in each of the equations on this workbook page.**

Work each problem together, encouraging the children to use their connect cubes to solve the equations.

Note: The children may lightly write an x in each blank, then replace each as they solve for x.



Flash Card Game

Say: **Today let's play a Flash Card Game.** Flash an Addition Equation Card and continue: **Look at this equation.** (Example: $4+1$) **Give a thumbs-up if you know what $4+1$ equals.** (Remind the children not to call out, just to give a thumbs-up.) Choose a volunteer to respond.

Continue for all of the Addition Equation Cards through 5.

Materials

- Addition Equation Cards through 5

Strategies to Solve Story Problems

Essential Question: How can we use objects to show addition?

Materials

- Backpack Bear's Math Big Book, page 44
- Math mats
- Two-sided Counters
- Connect cubes
- Whiteboards, markers

Operations & Algebraic Thinking

A.2 - Solve word problems with addition and subtraction within 10.

A.5 - Fluently add and subtract within 5.



1 Review Strategies for Adding

Say: **Today we will work in groups to solve addition problems.** **Each group will use a different strategy.** Reference *Backpack Bear's Math Big Book*, page 44.

2 Strategy Demonstration

Say: **Each group will solve the same story problem, but every group will use a different strategy. Listen to this story.** Backpack Bear has 6 red flowers and 2 yellow flowers in his garden. How many flowers does Backpack Bear have in all?

Divide the class into five groups, and demonstrate the following strategies for each:

- Group 1 will use the ten-frames on their math mats and two-sided counters.
- Group 2 will use connect cubes.
- Group 3 will draw pictures on their whiteboards.
- Group 4 will use their math mats and number line.
- Group 5 will use their whiteboards and markers to draw tally marks.

Repeat the story problem. Groups use their strategies to solve it.

3 Explanation of Addition Strategies

The groups share their answers and take turns to explain the addition strategies they used to solve the problem.

4 Using Strategies to Solve Story Problems

Rotate the groups so that each group uses a different strategy to solve each of the following story problems. (Example: Group 1 uses connect cubes. Group 2 will draw pictures on whiteboards. Group 3 will use their math mats and number line. Group 4 will use whiteboards and markers to draw tally marks. Group 5 will use the ten-frames on their math mats and two-sided counters.)

Share the following story problems. You may substitute the names given for names of children in your class. Discuss the correct answer to each problem before moving on.

- **Noah has 4 goldfish and 3 cats. How many animals does Noah have altogether?**
- **An apple tree had 7 apples on it and then 2 more apples grew. How many apples were on the apple tree in all?**
- **Emma went to the store to buy peanuts. She had 4 pennies when she started walking, and then she found 2 more pennies on the sidewalk. How many pennies did Emma have to buy peanuts altogether?**
- **Five fish swam by the log. Then 3 more fish swam by the log. How many fish swam by the log in all?**
- **Mia has 5 balloons. If her mother buys her 5 more balloons, how many balloons will Mia have altogether?**

Greater Number

Say: **Let's play "Greater Number." I will show you an Addition Equation Card. Then we will count on to solve the equation. Remember, we want to count on from the greater, or larger, number. Ready?**

Flash the Addition Equation Cards individually and select volunteers to identify the greater number and count on to solve the equation. Volunteers may ask for assistance from their classmates if needed.

Materials

- Selected Addition Equation Cards 5-10

Story Maps

Essential Question: What strategies can we use to solve word problems?

Materials

- Nursery Rhymes, pages 25 and 27
- Backpack Bear's Math Workbook #2, pages 13 and 14
- Pencils, crayons

Operations & Algebraic Thinking

A.1 - Represent addition and subtraction in a variety of ways.

A.2 - Solve word problems with addition and subtraction within 10.

1 Introduce a Story Map

Indicate *Nursery Rhymes*, page 25. Say: **Today we will learn how to use a story map. Who knows the nursery rhyme about Little Bo Peep? Let's say it together.**

Recite "Little Bo Peep" with the children.

Ask: **How many sheep do you think Little Bo Peep lost?** Volunteers respond.

Little Bo Peep

*Little Bo Peep has lost her sheep,
And doesn't know where to find them.*

*Leave them alone,
And they'll come home,
Wagging their tails behind them.*



2 Use a Story Map

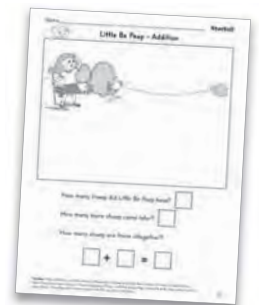
Distribute *Backpack Bear's Math Workbook #2*. Instruct the children to turn to page 13.

Indicate the "Little Bo Peep" addition story map.

Say: **Here is a scene from the "Little Bo Peep" nursery rhyme. It is a story map. Who can describe what you see? (Volunteers respond.) Let's use this story map to create a number story.**

Indicate the bottom box. Ask:

- **How many sheep did Little Bo Peep have? Let's count the sheep we see in the picture. (3) We'll put the number 3 in the number box.**
- **How many more sheep came home? (Volunteers respond.) Do we really know?**
- **Guess how many additional sheep came home, but don't say your answer.**
- **Now draw the additional sheep on your story map and write the number in the number box. (Answers will vary.)**



3 Create and Solve a Number Sequence



Say: **Now it's time to create a number sentence.** Demonstrate writing the numbers in the equation boxes.

Ask: **If Little Bo Peep had 3 sheep and (choose a number) more came, how many sheep did Little Bo Peep have altogether?** Write the number and read the completed equation together.

Say: **Let's try another one.**

Indicate *Nursery Rhymes*, page 27.

Ask: **What nursery rhyme does this make you think of? Right, "Mary Had a Little Lamb." Let's say the nursery rhyme together.**

Mary Had a Little Lamb

*Mary had a little lamb,
Little lamb, little lamb,
Mary had a little lamb,
Its fleece was white as snow*

*And everywhere that Mary went,
Mary went, Mary went,
Everywhere that Mary went,
The lamb was sure to go.*

*It followed her to school one day,
School one day, school one day,
It followed her to school one day,
Which was against the rules.*

*It made the children laugh and play,
Laugh and play, laugh and play,
It made the children laugh and play,
To see a lamb at school.*

Formative Assessment

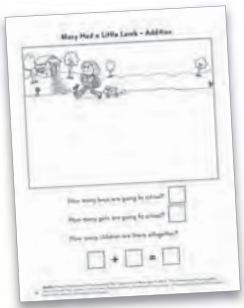
Story Maps

Say: **Turn to page 14 in your workbooks.** The children do this.

Ask:

- **How many boys do you think are going to school? Draw that many boys into the story.** (The children do this.) **Now write the number of boys next to the first sentence.**
- **How many girls do you think are going to school? Draw that many girls into the story.** (The children do this.) **Now write the number of girls next to the second sentence.**
- **Let's fill in the equation.** (Equations will vary.)
- **How many boys and girls are in school altogether?**

Volunteers bring their story maps to the front of the classroom and share their results.



Word Problems

Navigate a classroom computer to *Starfall.com*, Addition & Subtraction: "Word Problems" and select the "Add To/Result Unknown" activity. The children help navigate through the activity and solve the problems.

Materials

None

Addition With Coins

Essential Question: *What strategies can we use to solve word problems?*

Materials

- Backpack Bear's Math Big Book*, pages 13-15
- Math bags (containing coins)
- Math mats
- Pocket chart
- "Let's Go Shopping" worksheets
- Scissors, glue sticks
- Picture Cards with Price Tags:
 - Airplane, 9¢
 - Apple, 6¢
 - Orange, 10¢
 - Party Hat, 8¢
 - Pencil, 4¢
 - Pretzel, 7¢
 - Marble, 5¢

Operations & Algebraic Thinking

A.1 - Represent addition and subtraction in a variety of ways.

Money

M.1 - Identify the value of coins.

1 Review Penny, Nickel, and Dime

Indicate *Backpack Bear's Math Big Book*, pages 13, 14, and 15.

Review the Penny, Nickel, and Dime rhymes.

2 Uses for Money

Ask: **How do we use money in real life?** The children give examples such as to buy food, toys, houses, etc.

Ask: **Why is it important to know how much each coin is worth?** Discuss the children's responses.

Continue: **If I want to buy a toy that costs 10 cents, but I only have 5 cents, can I buy it? How much more do I need?** (Volunteers respond.) **Right, if I only have 5 cents, I need 5 more cents in order to have 10 cents.** Write $10 = 5 + \underline{\quad}$.

3 Coin Values

Distribute math bags and math mats and instruct the children to remove their bags of coins. Say: **Sort your coins into piles of pennies, nickels, and dimes.** The children do this.

Continue:

- **Show me a penny. How much is a penny worth?**
- **Show me a nickel. How much is a nickel worth?**
- **Show me a dime. How much is a dime worth?**



4 Going Shopping

Say: **Backpack Bear is going shopping. He would like to buy a few things, but he is not sure how much money he needs. He brought pictures of the items he would like to buy.**

The children will use their bags of coins and their math mats to solve the problems.

Indicate the *pencil* Picture Card.

Ask: **How much does this pencil cost? (4 cents) Take the pennies out of your math bag. Pretend you are giving Backpack Bear enough money to buy the pencil. Use the ten-frame on your math mat, and place the correct number of pennies Backpack Bear needs to buy the pencil.** Check to see that the children do this correctly. They clear their math mats after each purchase.

Indicate the Apple Picture Card With Money Tag.

Ask: **How much does the apple cost? (6 cents) How many pennies would you need to buy the apple? (6) Place 6 pennies in your ten-frame. Can you think of other coins you could use instead of 6 pennies to buy the apple?**

Lead the children to understand that they could also use a nickel plus a penny. Remind them that a nickel is worth 5 cents. (Write $5 + \underline{\quad} = 6$.) Ask: **If you have 5 cents how much more do you need to have a total of 6 cents? What coin could you add to the nickel?**

Indicate the remaining Picture Cards with Price Tags. The children use their coins to determine different ways to help Backpack Bear pay for each item.



Formative Assessment

“Let’s Go Shopping” Worksheet

Distribute the “Let’s Go Shopping” worksheets. Instruct the children to place their paper pennies on their math mats after they cut them apart.



Say: **Today you will help Backpack Bear with his shopping. He has some money but not enough to buy each item. You will use the pennies you cut apart to add to Backpack Bear’s money so that he will have enough to buy each item.**

The children cut apart the pennies and place them on their math mats. Say:

- **Look at the apple. How much does it cost?**
- **Backpack Bear has a nickel. Put your finger on the nickel. Does he have enough to buy the apple?**
- **How many pennies should you add to Backpack Bear’s nickel in order for him to have 6 cents? Right, one! Glue a penny next to the nickel.**
- Write and say: $5 + 1 = 6$. Ask: **Does Backpack Bear have enough to buy the apple now? (yes)**

Repeat this procedure for the remaining items.

Learning Centers

DAY

5

1 Computer

The children explore:

- Monthly calendar
- Money Link
- Add & Subtract: "Word Problems"
- Add & Subtract: "Make 10"

Children may navigate to other *Starfall.com* math activities after they have explored those suggested above.

Materials

- Computers navigated to *Starfall.com*

Operations & Algebraic Thinking

A.1 - Represent addition and subtraction in a variety of ways.

A.4 - For 1-9, find the number that makes 10.

Money

M.1 - Identify the value of coins.

2 "Coin Town"

For each turn the child spins, then moves his or her playing piece to the next coin equal to the amount shown on the spinner.

The child identifies the coin and takes the corresponding coin out of the bank and places it into his or her own bank (cup).

At the end, the children sort their coins and count their pennies, nickels, and dimes.

Materials

- 1 or 2 "Coin Town" game boards
- Playing piece for each child
- Coin spinners
- One cup of coins – the bank (pennies, nickels, dimes)
- One empty paper or plastic cup for each player



3 "Parking Lot"

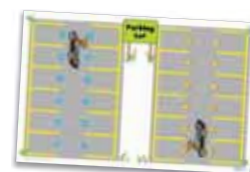
The first child selects a domino, adds the dots on the domino, then "parks" the domino in the appropriate parking space.

If the child chooses a domino that equals the same value as one already on his or her board, he or she stacks it on top.

The children take turns. The first child to fill all of his or her parking spaces wins, or the game continues until both children fill their spaces.

Materials

- 1 or 2 "Parking Lot" game boards
- Dominoes placed face down



4 Teacher's Choice

Review or expand a skill from this unit according to the needs of your students.

5 Summative Assessment: Create Addition Problems to 10

Place several sets of Number Cards face down in a deck. The children take turns to draw a Number Card and write that number as the first number of the equation. They then write the number that when added totals 10.

The children may use connect cubes to help them.

Observe the children as they work in this center and note their ability to determine the answers on the Unit 8, Week 20 Summative Assessment Checklist.

Materials

- Create Addition Problems to 10 worksheets
- Several sets of Number Cards 0-10
- Two sets of connect cubes (10 each of two different colors)
- Summative Assessment Checklist for Unit 8, Week 20

